

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

REC'D 18 MAY 2004

To:

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) **5 - MAY 2004**

Applicant's or agent's file reference
502331

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/AU2004/000464

International filing date (day/month/year)
8 April 2004

Priority date (day/month/year)
11 April 2003

International Patent Classification (IPC) or both national classification and IPC
Int. Cl. ⁷ H02J 7/00

Applicant

COCHLEAR LIMITED et al

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/AU2004/000464

Box No. I	Basis of the opinion
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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
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International application No.

PCT/AU2004/000464

Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims 1-33	YES
	Claims	NO
Inventive step (IS)	Claims 2-19,22-24,26-33	YES
	Claims 1,20,21,25	NO
Industrial applicability (IA)	Claims 1-33	YES
	Claims	NO

2. Citations and explanations:

- D1 US 6426628 (PALM et al.) 30 July 2002 and D5 US 5869970 (PALM et al.) 9 February 1999
D2 WO 02060029 (COCHLEAR LTD.) 1 August 2002
D3 WO 0069012 (EXONIX CORP.) 16 November 2000
D4 US 5903764 (SHYR et al.) 11 May 1999
D5 US 5869970 (PALM et al) 9 February 1999

Novelty (N)

None of the citations explicitly discloses all of the features of the claims, when the citations are taken alone. The claims may be considered novel, although (see Box VIII) the claims are not fully supported by the description and lack clarity so this is open to interpretation.

Inventive step (IS)

D4 discloses a plurality of switch-drivers and a plurality of smart batteries. The batteries are selectively recharged by the smart battery selector. Use of either one or the other of two smart batteries is also explicitly disclosed. Separate switches connecting either of the batteries to the output (or load) are also explicitly disclosed (see figures). Claims 1 and 25 lack an inventive step when D4 is combined with common general knowledge in the art of electronics. There are minor (non-inventive) differences between D4 and the claim, for example D4 uses a plurality of smart batteries, as distinct from ordinary (non-smart) batteries, consequently the citation is considered a Y document. However D4 explicitly discloses a smart charger and a smart selector in conjunction with the smart battery. Furthermore D4 discloses a conversion means (AC/DC) for supplying the smart charger voltage from the supply voltage. In some interpretations it would be obvious that a "first conversion means for converting a supply voltage to a battery voltage to enable charging of one or more of the rechargeable batteries" (as recited in claim 1) is a technical equivalent to the arrangement of D4, since D4 allows selection of one or more of the batteries to be charged.

D4 is directed to a portable device and does not disclose that the system forms part of an "implantable device". Since the present application management system preferred embodiment is for an implantable device (eg. hearing aid) and since there are non-trivial problems to be overcome in adapting the system of D4 into an implantable device, Claims 20 and 21 do involve an inventive step when D4 is taken alone. Nevertheless D2 discloses a use for a plurality of batteries in an implantable hearing aid. When D2 is combined with D4, claims 20 and 21 lack an inventive step.

D1, D3 and D5 also disclose power management systems for implantable devices. Hence claims 20 and 21 lack an inventive step when any one of D1, D3 and D5 are combined with D4.

Industrial applicability (IA)

The application and claims have an industrial application.

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PCT/AU2004/000464

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 1 and 25 are not fully supported by the description. There are two preferred embodiments (see figure 1 and figure 4). The first embodiment, see figure 1 with reference to the description page 8 line 32 to page 10 line 4 the control unit provides **"pseudo-simultaneous charging of all batteries"** and **"pseudo-simultaneous discharging of the batteries"**. The second embodiment, see figure 4, with reference to the description page 10 lines 28 to page 11 line 14 is similar with respect to the pseudo simultaneous battery switching, except the first voltage converter is reused. Claims 1 and 25 do not match the description in function or purpose, which is required by PCT rules. The claims go beyond the disclosure and are considered speculative in nature.

2. Claim 1 and 25 are unclear as to whether the battery switches are connected simultaneously (or not) to either the charging means or the output circuit.

Even claim 4 that specifies that batteries are chosen, **"one at a time"** is still not entirely clear because the period of **time is not defined**. For example the time period may be understood to be long (eg. until the battery is charged or discharged) or short (eg. for less than a second during the pseudo simultaneous or multiplexed switching time).

Such lack of clarity in most of the claims has resulted in an unclear scope of the monopoly intended. Further opinion on the novelty and/or inventive step is reserved until the clarity and full support for the claims requirements are addressed.